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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,021	06/22/2005	Alain Vanderghenst	Q72658	8865

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EXAMINER

AWAI, ALEXANDRA F

ART UNIT	PAPER NUMBER
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3663

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/540,021	Applicant(s) VANDERGHEYNST ET AL.	
	Examiner Alexandra Awai	Art Unit 3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/22/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

1. Claims 1-18 submitted 11/30/2005 have been examined.

Information Disclosure Statement

2. The information disclosure statement filed 6/22/2005 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 10-18 are objected to under 37 CFR 1.75(c) as being in improper form because they fail the “Infringement Test” for dependent claims. See MPEP § 608.01(n). That is, a proper dependent claim shall not conceivably be infringed by anything which would not also infringe the basic claim. In the current case, the method limitations of claim 1 are no more than recitations of intended use when included in an apparatus claim. A method limitation or recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP § 2111-2115, particularly MPEP § 2114, which states:

“A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim.” *Ex parte Masham*, 2 USPQ2d 1647.

“Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function.” *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531.

“[A]pparatus claims cover what a device is, not what a device does.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.* 15 USPQ2d 1525, 1528.

Furthermore, as set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon (i.e., the MOX fuel rod) does not serve to limit an apparatus claim. Since the apparatus claim might conceivably be infringed by an identical device that performs a process distinct from that claimed in the method claim, it is improper.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as not enabling. Claims 1 and 2 are incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are those devices or means that enable the practicing of the claimed steps. As described in the specification, a number of devices not named in the claimed are *essential* to the method. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-6, 8-15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoenig et al.

Schoenig et al. disclose a system for non-destructively testing nuclear fuel rods comprising multiple detector devices for quality control of multiple rod attributes, and means for conveying the nuclear fuel rods at uniform speed. The detector devices comprise the following:

- An optical reader (14) for identifying rods by engraved serial numbers,
- An annular NaI detector (30) for measuring the gamma ray emission resulting from the natural decay of elements in the fuel material,
- A multi-detector gamma densitometer (32) including a collimated gamma source (e.g., ^{137}Cs) and plastic scintillation detector,
- An active scanner (38) including a collimated neutron source (e.g., ^{252}Cf) and annular gamma ray detector.

These detector devices are each coupled to a computer (16) that performs the conventional analysis – i.e., energy discrimination and summing (col. 8, lines 2+) – in order to obtain information regarding the elemental constitution of the rods, as well as their internal structure or dimensions. The means for conveying the rods is embodied by multiple sets of pinch rollers (24) that read on the claimed synchronized driving mechanisms. The devices listed above are aligned in the path of the moving rod and operate concurrently.

Both the apparatus and method claims specifically recite several functional limitations dictating how the system and its components are intended to be used. However, a skilled artisan

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would immediately appreciate that the apparatus disclosed by Schoenig et al. comprising the devices as discussed above is fully capable of acting on a MOX fuel rod. In so acting, the measuring of plutonium that alone materially distinguishes the prior art practice from the claimed practice would inevitably occur. It would have been obvious to one of ordinary skill in the art at the time of invention to use the prior art apparatus to carry out a quality control of a MOX fuel rod because such is no more than the advantageous use of a well-known expedient in the art. The motivation to modify the prior art practice would have been to perform a beneficial quality check without recourse to additional design work or new technology.

Examiner notes that the instant specification is not enabling, in and of itself, for constructing any one of the claimed detector devices or the means for conveying the fuel rods, or for configuring those known components together to function as claimed. Rather, it merely identifies the conventional devices diagrammatically represented in the figures. The disclosed invention consists only of known components, with the alleged contribution over the prior art consisting of combining several known means of determining quality attributes and applying the resulting system to MOX fuel rods in particular. It is *prima facie* obvious that there is an advantage to performing more quality checks relative to performing fewer. In fact, Schoenig et al. teach the concept of performing non-destructive testing of fuel rods for multiple attributes, and the present application merely applies this concept. Additionally, Applicant is not the first to conceive of testing MOX fuel rods, which requires only the conventional detectors disclosed by the cited reference. Where MOX fuel rods are industrially fabricated and used, there is a natural and obvious motivation to test them, and the means already widely available to do so.

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10. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoenig et al. as applied to claims 1 and 10, and further in view of admissions by Applicant alone, or additionally Chen et al. (US 6,297,507 B1).

As stated in the Background of the Invention section of the instant specification, “[contamination of the external surface of the fuel rod] is commonly verified by measuring the alpha activity of the fuel rod or selected areas of the fuel rod” (p. 2). See MPEP § 2129. It would have been obvious to one of ordinary skill in the art to modify the system taught by Schoenig et al. to include a conventional alpha detector. The truncated disclosure of the annular scintillation detector 41 of the instant application (specification, p. 12), which fails to set forth sufficient enabling guidance, is taken as an implicit disclosure that the claimed alpha detector configuration is conventional.

Alternatively, Chen et al. disclose an annular alpha particle detector (see Abstract). Although this detector is not used in the same way as the detector claimed, Chen et al. provide further evidence that annular alpha particle detectors are widely available. It would have been obvious to one of ordinary skill at the time of invention to employ this widely available technology as claimed, as such is no more than the advantageous application of a well known expedient in the art. Just as the fuel rod is passed through a channel extending through the gamma detectors disclosed by Shoenig et al., if the skilled artisan wished to verify the external contamination of the fuel rod – as is common, according to Applicant – the skilled artisan would pass the fuel rod through a channel extending through a conventional annular alpha particle detector.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Awai whose telephone number is (571) 272-3079. The examiner can normally be reached on 9:30-6:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AA
December 19, 2006


JACK KEITH
SUPERVISORY PATENT EXAMINER